THE ANNALS

AND

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[SEVENTH SERIES.]

"..... per litora spargite muscum,
Naiades, et circùm vitreos considite fontes:
Pollice virgineo teneros hic carpite flores:
Floribus et pictum, divæ, replete canistrum.
At vos, o Nymphæ Crateridès, ite sub undas;
Ite, recurvato variata corallia trunco
Vellite muscosis e rupibus, et mihi conchas
Ferte, Deæ pelagi, et pingui conchylia succo.
N. Parthenii Giannettasi, Ecl. 1.

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I.—*Notes on the Natural History of East Finmark.* By Canon A. M. Norman, M.A., D.C.L., LL.D., F.R.S., F.L.S.

[Continued from vol. x. p. 486.]

[Plates I.–IV.]

CRUSTACEA (continued).

The gatherings of Copepoda which were brought by me from East Finmark have been placed in the hands of Mr. Thomas Scott, whose knowledge of the smaller and more difficult forms of this order is unsurpassed. I am greatly indebted to him for his report, which makes the account of the Crustacea complete.

The following species, which are not among those collected by myself, have been recorded from East Finmark—the first seven by Professor G. O. Sars *, the *Canthocamptus* by

* Sars (G. O.), 'An Account of the Crustacea of Norway,' vol. iv. Copepoda Calanoida (now in course of publication).

Prof. Lilljeborg * in a paper received during the present month, and the *Balænophilus* by Aurivillius †. *Balænophilus* is described as living on the baleen-plates of *Balænoptera Sibbaldii*, Gray.

Pseudocalanus elongatus, Boeck.
Undinopsis Bradyi, G. O. Sars.
Euchæta norvegica, Boeck.
Diaptomus bacillifer, Koelbel.
—— *laciniatus*, Lilljeborg.
Heterocope borealis, S. Fischer.
Metridia longa, Boeck.
Canthocamptus insignipes, Lilljeborg.
Balænophilus unisetosus, P. O. C. Aurivillius.

Among the Copepoda dredged in the Varanger Fiord was a beautiful new genus which I had procured two years previously in the Firth of Clyde. I have had for some years full drawings of this Copepod ready for publication, and I here give a preliminary notice of it.

ANCORABOLUS ‡, Norman, gen. nov.

Antennules three-jointed. *Antennæ* without a secondary branch, composed of two elongated joints. *First feet* with the second basal joint produced and bent outwards, with the inner branch attached to the base of this joint, and two-jointed; the second joint terminating in three plumose setæ (instead of the claw which is usual in some allied genera): outer branch also two-jointed. *Second, third, and fourth feet* with second basal joints long, the inner branch two-jointed, the first being small; outer branch three-jointed. *Fifth feet* elongated and slender, inner branch terminating in a narrow elongated lobe of unusual length; outer branch also consisting of a single narrow joint.

The antennæ and second and two following feet in this genus resemble those of the genus *Laophontodes*, but the first and last feet are very different from those of that or of any other allied genus.

Ancorabolus mirabilis, Norman, sp. n.

Cephalosome with a well-developed horizontally directed rostrum, which is cleft at the extremity and bears either one or two pairs of setæ on the sides situated on little protuberances. Cephalosome, metasome, and first three segments of

* Lilljeborg, "Synopsis specierum hucusque in aquis dulcibus Sueciæ observatarum familiæ Harpacticidarum," Kongl. Svenska Vet.-Akad. Handl. vol. xxxvi. (Oct. 1902).

† Aurivillius (P. O. C.), "New Genus and Species of Harpacticida," K. Svenska Vet.-Akad. Handl. vol. v. (1879).

‡ An anchor-caster, ἄγκυρα and βάλλω.

urosome ornamented with a wonderful series of simple, furcate, or three-branched large horn-like processes, which are arranged as follows:—As regards the dorsal surface: on each side of the centre of the hinder margin of the cephalosome is a backward-directed, simple, lancet-shaded, setose process, flanked on the inner side by two minute similar processes; each of the four following segments is furnished with a similar pair of lancet-shaped processes, but devoid of the more minute flanking processes. This dorsal decoration is, however, inconspicuous and of little moment compared with the large appendages borne on the lateral margins, which are as follows:—On each side of the cephalosome there is near the base of the antennule a small simple process *; this is followed by a trifid process, then by a bifid process, this again by another trifid process; these four processes increase in size from the first to the last. The first, second, and third segments of the metasome bear on their side a trifid process similar to the last of those on the cephalosome. On the fourth segment of the metasome and on the first three of the urosome the smaller of the three horns of the trifid process disappears, and the two that remain are more entirely separated from each other at their base and have acquired still greater size; so that the lower and larger of them attains on these segments a length which equals about three quarters of the breadth of the segment from which they spring.

The branches of the caudal furca are very long, nearly equalling the length of the three preceding segments; at half their length there is a spinule on the outer margin, and they terminate in a strong and greatly produced stiliform seta, at the base of which are two or three minute setæ. The length of the furca and its attached setæ is nearly if not quite equal to that of the entire rest of the animal.

Length 0·8 millim.

This is a most extraordinary and beautifully constructed species. Only one other genus of the Harpacticoida has yet been found which surpasses *Ancorabolus* with respect to the remarkable development of the body ornament: that species is the wonderful *Pontostratiotes abyssicola*, G. S. Brady, of the 'Challenger' Expedition, which was dredged on the bed of the North Atlantic, lat. 37° 29′ S., long. 27° 31′ N., in 2200 fathoms.

Ancorabolus mirabilis was first dredged in 1888 in the Firth of Clyde, when I was a guest of Sir John Murray in his steamer the 'Medusa.' It was blowing rather hard for dredging, and we ran under the lee of the east side of Little

* This first small simple process appears to be sometimes absent.

Cumbrae and let down the dredge in about 20 fathoms. It came up filled with nothing but decaying seaweeds, which had been drifted together to that spot and which looked absolutely rubbish. But long experience had taught me that the most unlikely places sometimes produce most interesting things. I consequently worked some of this dead stuff through sieves in a tub of water, and that water having been passed through a muslin bag, the contents of the bag was bottled. Very few Crustacea were found on examination, but nevertheless there were three species new to Britain and two of them new to science—the Cumacean *Campylaspis sulcata*, G. O. Sars, the present species of *Ancorabolus*, and a second species of the same genus.

It is curious that two years after I should have a second time met with *A. mirabilis* at such a distance from its first-known habitat in the Varanger Fiord.

Notes on some Copepoda from the Arctic Seas collected in 1890 *by the Rev. Canon A. M. Norman, F.R.S.* By Thomas Scott, F.L.S.

The Copepoda recorded here are for the most part members of the family Harpacticidæ, but a few belong to other groups; they were collected by the Rev. A. M. Norman about the end of June and beginning of July, 1890, while on a visit to the Lofoten Islands and East Finmark, and I desire to express my indebtedness to him for permitting me to examine and record them. I have also to acknowledge the valuable assistance rendered by my son, Mr. Andrew Scott, in the identification of the smaller and doubtful species and for the drawings necessary to illustrate some of the descriptions of rare or apparently new forms.

The species and varieties recorded number sixty-four, and they belong to thirty-two genera. The localities where they were obtained are as follow:—Svolvær, Lofoten Islands; and in East Finmark from Lakse Fiord, Vadsö, Varanger Fiord, Bög Fiord, and Klosterelv Fiord. The following are the species identified or described:—

Fam. **Calanidæ.**

Genus Calanus, Leach, 1816.

Calanus finmarchicus (Gunnerus).

One or two specimens, slightly immature, but apparently belonging to this species, were obtained in a gathering from Bög Fiord.